

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Michael J. Gazewood

Group Art Unit: 3628

Filed: Concurrently Herewith

Serial No.:

For: "Ribbed Sealing Element And Method Of Use"

Examiner: J. Hewitt

Docket No.: 115.015

Attention: Box Patent Application
Assistant Commissioner For Patents
Washington, D.C. 20231

PRELIMINARY AMENDMENT - CONTINUATION APPLICATION

Sir:

Please add the following new claims and amend the specification as follows:

In the Specification:

On the first page of the application, paragraph 1 at line 1, please add the following:

This application is a continuation of application serial no. 09/303,201, filed on 30 April 1999.

In the Claims:

21. An anchoring apparatus for use in a tubular member, the apparatus comprising:

-a top swage member having a longitudinal center of axis, wherein said top swage member has a first cylindrical surface that extends to a second conical surface;

-a first cylindrical anchoring member disposed about said top swage member and wherein said first cylindrical anchoring member has a complete outer perimeter, said first anchoring member containing a first plurality of continuous, individual circumferential ribs disposed about said outer perimeter, wherein said first plurality of continuous, individual circumferential ribs comprise a series of annular grooves encircling said first cylindrical anchoring member, and wherein said first

cylindrical anchoring member has a top end and a bottom end and wherein said first cylindrical surface of said top swage member is concentrically disposed within said first cylindrical anchoring member; and wherein said first cylindrical anchoring member is made of a malleable metal having a hardness of 105 or less on the Rockwell B scale;

-setting means for driving said top swage member longitudinally downward relative to said top swage's longitudinal center axis and radially deforming said first cylindrical anchoring member so that said first plurality of continuous, individual circumferential ribs are expanded outward;

-an extension member having a first end and a second end and wherein said first end is attached to said bottom end of said first cylindrical anchoring member.

22. The apparatus of claim 21 wherein said annular grooves have a radius of curvature of approximately 0.0470 inches, and wherein said grooves have a height of approximately 0.033 inches.

23. The apparatus of claim 22 wherein said first cylindrical anchoring member further comprises an elastomeric seal.

24. The apparatus of claim 23 further comprising:

-a second cylindrical anchoring member attached to said second end of said extension member, wherein said second cylindrical anchoring member has a complete outer perimeter, and wherein said second cylindrical anchoring member contains a second plurality of continuous, individual circumferential ribs disposed about said second cylindrical anchoring member and completely encircles the outer perimeter of said second cylindrical anchoring member,

and wherein said second plurality of continuous, individual circumferential ribs comprise a series of annular grooves encircling said second cylindrical anchoring member;

-a bottom swage member disposed within said second cylindrical anchoring member, said bottom swage member having a longitudinal center of axis;

-and wherein said setting means also comprises means for driving said bottom swage member longitudinally upward relative to said bottom swage member's longitudinal center axis and radially deforming said first cylindrical anchoring member so that said continuous circumferential ribs are expanded outward.

25. The apparatus of claim 24 wherein said second cylindrical anchoring member is made of a malleable metal having a hardness of 105 or less on the Rockwell B scale.

26. The apparatus of claim 25 wherein said second cylindrical anchoring member further comprises an elastomeric seal.

27. The apparatus of claim 23 wherein said extension member has attached thereto a bridge plug device.

28. The apparatus of claim 26 wherein said bottom swage member has a first cylindrical surface that extends to a second conical surface, and wherein said first cylindrical surface is concentrically disposed within said second cylindrical anchoring member.

29. A method of sealing and anchoring a device within a tubular member comprising:

-positioning the device in an internal diameter wall of the tubular member, the device

comprising: a top swage disposed within the tubular member, said top swage having a longitudinal center of axis; a first cylindrical sealing member disposed partially about said top swage, said first cylindrical sealing member containing a first plurality of continuous circumferential annular grooves disposed about said first cylindrical sealing member so that a first plurality of continuous, circumferential ribs are formed; and wherein said first cylindrical sealing member is made of a malleable metal;

- driving said top swage downward relative to said top swage's longitudinal center of axis with a setting tool member, said setting tool member being selectively attached to the device;

- deforming the first cylindrical sealing member;

- expanding the first cylindrical sealing member radially outward;

- embedding at least one of said first plurality of continuous, circumferential ribs into the internal diameter wall;

- sealing the device within the internal diameter wall with at least one of said first plurality of continuous, circumferential ribs;

- anchoring the device within the internal diameter wall with at least one of said first plurality of continuous, circumferential ribs.

30. The method of claim 29 wherein said device further comprises a first elastomeric member circumferentially disposed on said first cylindrical sealing member and wherein the step of expanding the first cylindrical sealing member radially outward includes:

- forcing the first elastomeric member against the internal diameter wall;

- providing a secondary seal for the device within the internal diameter wall.

31. The method of claim 30 wherein the device further includes a second cylindrical sealing

member attached to said first cylindrical sealing member, said second cylindrical sealing member containing a second plurality of continuous, circumferential annular grooves disposed about said second cylindrical sealing member so that a second plurality of continuous circumferential ribs are formed; and wherein said second cylindrical sealing member is made of a malleable metal and has a top end and a bottom end; a bottom swage disposed partially within said second cylindrical sealing member, said bottom swage having a longitudinal center of axis; and the method further comprises:

- driving said bottom swage longitudinally upward relative to said bottom swage's longitudinal center of axis with the setting tool member;
- deforming the second cylindrical sealing member;
- expanding the second cylindrical sealing member radially outward;
- embedding at least one of said second plurality of continuous, circumferential ribs into the internal diameter wall;
- sealing the device within the internal diameter wall with at least one of said second plurality of continuous, circumferential ribs;
- anchoring the device within the internal diameter wall with at least one of said second plurality of continuous, circumferential ribs.

32. The method of claim 31 wherein the second cylindrical sealing member further comprises a second elastomeric member circumferentially disposed thereon and wherein the step of expanding the second cylindrical sealing member radially outward includes:

- forcing the elastomeric member against the internal diameter wall;
- providing a tertiary seal for the device within the internal diameter wall;
- and wherein the step of driving said top and bottom swage upward and downward

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0 | 0.0000 | 0.0001 | 0.0002 | 0.0003 | 0.0004 | 0.0005 | 0.0006 | 0.0007 | 0.0008 | 0.0009 | 0.0010 | 0.0011 | 0.0012 | 0.0013 | 0.0014 | 0.0015 | 0.0016 | 0.0017 | 0.0018 | 0.0019 | 0.0020 | 0.0021 | 0.0022 | 0.0023 | 0.0024 | 0.0025 | 0.0026 | 0.0027 | 0.0028 | 0.0029 | 0.0030 | 0.0031 | 0.0032 | 0.0033 | 0.0034 | 0.0035 | 0.0036 | 0.0037 | 0.0038 | 0.0039 | 0.0040 | 0.0041 | 0.0042 | 0.0043 | 0.0044 | 0.0045 | 0.0046 | 0.0047 | 0.0048 | 0.0049 | 0.0050 | 0.0051 | 0.0052 | 0.0053 | 0.0054 | 0.0055 | 0.0056 | 0.0057 | 0.0058 | 0.0059 | 0.0060 | 0.0061 | 0.0062 | 0.0063 | 0.0064 | 0.0065 | 0.0066 | 0.0067 | 0.0068 | 0.0069 | 0.0070 | 0.0071 | 0.0072 | 0.0073 | 0.0074 | 0.0075 | 0.0076 | 0.0077 | 0.0078 | 0.0079 | 0.0080 | 0.0081 | 0.0082 | 0.0083 | 0.0084 | 0.0085 | 0.0086 | 0.0087 | 0.0088 | 0.0089 | 0.0090 | 0.0091 | 0.0092 | 0.0093 | 0.0094 | 0.0095 | 0.0096 | 0.0097 | 0.0098 | 0.0099 | 0.0100 |

bottom swage is moved upward;

the upper swage is moved downward.

- retrieving the setting tool member from the tubular member.

-a top swage member, said top swage member having a longitudinal center of axis
first end and a second end;

to said top swage member's longitudinal center axis and wherein said longitudinal movement of said top swage member radially deforms said first cylindrical sleeve so that said first cylindrical

sleeve expands radially outward.

35. The apparatus of claim 34 further comprising:

-a second cylindrical sleeve connected to said first cylindrical sleeve, said second cylindrical sleeve being made of a malleable metal having a hardness of 105 or less on the Rockwell B scale, and wherein said second cylindrical sleeve contains a second plurality of individual circumferential ribs disposed thereon comprising a series of circular annular grooves encircling said first cylindrical sleeve, and wherein said second cylindrical sleeve has a top end and a bottom end;

-a bottom swage member disposed within said second cylindrical sleeve, said bottom swage member having a longitudinal center of axis and having a first end and a second end, and wherein said first end is disposed within said second cylindrical sleeve;

-and wherein said setting means further comprises means for driving said bottom swage longitudinally upward relative to said bottom swage member's longitudinal center axis and wherein said longitudinal movement of said bottom swage member radially deforms said second cylindrical sleeve so that said second cylindrical sleeve expands radially outward.

36. The apparatus of claim 35 wherein said series of annular grooves of said first cylindrical sleeve have a radius of curvature of between 0.030 inches to 0.060 inches, and wherein said annular grooves of said second cylindrical sleeve have a radius of curvature of between 0.030 inches to 0.060 inches.

37. The apparatus of claim 36 wherein said second cylindrical sleeve has disposed thereon a second elastomeric seal.

-Please cancel claims 1 through 20 in this application without prejudice nor disclaimer as to the subject matter contained therein.

REMARKS

Applicant respectfully submits this Preliminary Amendment . This Continuation Application continues from my Original Application that was filed on 30 April 1999, serial No. 09/303,201. A Notice of Allowance and Issue Fee Due was mailed by the Patent Office on 7 May 2001, and the Issue Fee is due on 7 August 2001 for said Original Application.

Therefore, pursuant to this Preliminary Amendment, there is presently pending in this Continuation Application Claims 21 through 37. Claims 1 through 20 in this application have been cancelled without prejudice nor disclaimer as to the subject matter contained therein. If it would aid in disposition of this matter, the Examiner is kindly requested to contact the undersigned. Allowance of these claims at an early date is solicited.

Respectfully submitted,

Date

3- July -2001


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